

## **Bozeman Pass Wildlife Linkage and Highway Safety Pilot Study Quarterly Progress Report # 2 –May 1- July 31 2003**

This report was prepared by staff at the Craighead Environmental Research Institute (CERI) for the Montana Department of Transportation and Western Transportation Institute as part of the Bozeman Pass Wildlife Linkage and Highway Safety Pilot Study. 27 July, 2003.

During the second quarter of 2003, the Bozeman Pass Wildlife Linkage and Highway Safety Pilot Study is in the pre-construction phase of the project. CERI is continuing to collect data on animal-vehicle collisions (Task 1) and documenting animal crossing areas (Task 2) near the milepost 314 MRL bridge.

### **Animal-vehicle collision monitoring (Task 1)**

Volunteers recorded road-kill on a daily basis over Bozeman Pass as they commuted to Bozeman. CERI personnel recorded road-kill on a weekly basis. A two-week period of intensive road-kill survey was done for comparison purposes by two intern observers during June 3-16. They drove over the entire Pass route just after sunrise and just before sunset in order to determine whether new road-kills occurred during daytime or night. The total number of road-kills observed will be compared with the number obtained using the standard level of effort (volunteers and CERI personnel) to get an idea of how many records are missed in this manner. During the time period (Jan.1 – July 31) approximately 90 animals were recorded as road-kills between Bozeman and Livingston using all methods. Locations for road-kills were mapped and entered into the GIS database. Documenting animal-vehicle collisions is still in progress and will continue throughout 2003 and 2004 during the pre-construction phase.

### **Document Animal Crossings (Task 2)**

Two intern observers were placed near to the MRL bridge at milepost 314 during a two-week period in June (3-16) 2003 to determine the number of animals that travel underneath the MRL bridge during the early morning and late evening, and to observe any animals crossing over the highway at the same time. The observers arrived one hour before dawn and observed two hours after dawn in the morning and arrived two hours before sunset and observed one hour after sunset. Binoculars and night vision goggles were used from a vantage point north of the overpass to identify animals in and around the overpass. During this same time period, one of the observers drove Bozeman Pass to identify road-kill that had been killed during the previous evening and early morning. We are planning to have observers repeat this same observation study in the fall of 2003 for another two-week period. If additional funding is available, we would like to do this at least 4 times per year; once during each season.

During the 84 hours of observations at the overpass, 90 total observations were made of animals utilizing the area in and around the milepost 314 MRL bridge. Animals that utilized the underpass included white-tailed deer, marmots, rabbits, skunks and a cat.

During this time period, 27 animals crossed underneath the MRL bridge. White-tailed deer were the most numerous species observed crossing underneath the MRL bridge (23 individuals), followed by rabbits (2 individuals), a marmot (1 individual) and a cat (1 individual). White-tailed deer tended to cross underneath the MRL bridge using a game trail on the east side of the underpass. On two separate occasions, white-tailed deer were seen attempting to cross over the freeway but then stopped and used the underpass instead. On June 10, 2003 a male white-tailed deer was seen approaching the underpass from the north and was spooked (probably by an oncoming train) and instead ran up onto the freeway where it was killed in a vehicle collision at approximately 2150 hours.

Road-kill data was recorded on Bozeman Pass during this same time two-week period as discussed above; once in the morning and once in the evening. During the 28 hours of road-kill surveys, 26 animals were recorded as being killed on the pass. The animals ranged from medium sized mammals (skunks, raccoons, marmots, porcupines) to large mammals (deer and elk). These data will be tabulated for the next report.

Three remote cameras in culverts along Rocky Creek were monitored during the period. Event data was collected and photographs were recorded. A fourth camera was installed in July at another culvert along Rocky Creek. Cameras will continue to be monitored during the pre-construction phase (2004-2005).

Preparations for an animal track bed proceeded during this period. Lance Craighead filed an application for an Encroachment Permit with MDT on June 12. The permit was conditionally approved and returned on July 10: the application will only be valid if an approved Right of Entry Permit is obtained from Montana Rail Link. At this time we are beginning enquiries into applying for and obtaining a Right of Entry Permit. If all goes well we may be able to begin construction of a track bed for obtaining animal tracks as the pass beneath the MRL bridge. Once this is built we will be able to obtain an accurate record of pre-construction and post-construction use of the underpass.

### **Refine GIS model (Task 3)**

During the second quarter of 2003, no more work was done on refining the GIS model. As more road-kill data are collected it will be incorporated into the model and evaluated.

### **Other related activities**

Presentations on the Bozeman Pass Wildlife Linkage and Highway Safety Pilot Study were made at the Writer's Workshop at the B-bar Ranch (May 3), the Yellowstone Institute (May 23), and the Bozeman Pass Citizens Group (May 4). Meetings were held with Working Group members on May 19 and May 29. Progress was made on writing a paper about the results of 2001 and 2002 with Elizabeth Roberts for submission to the Wildlife Society Bulletin.

Time spent on each of the above tasks conformed to the planned schedules. Approximately one-tenth of the time planned for these pre-construction data collection activities was completed during this period; to date about 12/29ths of all pre-construction data collection has been completed. Similar amounts of the budget were expended.